### PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International	τ				
325.0208PCT	TONTONIMEN ACTION	Preliminary Examination Report (Form PCT/IPEA/416)	)				
International application No.	International filing date (day/mon	nth/year) Priority date (day/month/year)					
PCT/US03/25372	13 August 2003 (13.08.2003)	05 June 2003 (05.06.2003)					
International Patent Classification (IPC)	or national classification and IPC						
IPC(7): F25J 3/00; F17C 9/02: F02C 7/143 and US Cl.: 62/620; 50.2; 60/39.02, 643							
Applicant							
FLUOR CORPORATION							
Examining Authority and	is transmitted to the applicant ac						
2. This REPORT consists of	a total of sheets, including	this cover sheet.					
This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of sheets.							
3. This report contains indica	ations relating to the following i	items:	7				
I Basis of the report							
II Priority							
III Non-establishme	ent of report with regard to nov	elty, inventive step and industrial applicability					
IV Lack of unity of	f invention						
V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement							
	<del></del>						
VII Certain defects in the international application							
VIII Certain observations on the international application							
Cortain Coservations on the international application							
Date of submission of the demand							
Date of submission of the demand		Date of completion of this report					
05 February 2004 (05.02.2004)		15 June 2004 (15.06.2004)					
Name and mailing address of the IPEA/US		rized officer	$\dashv$				
Mail Stop PCT, Attn: IPEA/US Commissioner for Patents		am C Doerrier	+				
P.O. Box 1450 Alexandria, Virginia 22313-1450	` .]						
Facsimile No. (703) 305-3230 Telephone No. (703) 308-0861 Form PCT/IPEA/409 (cover sheet)(July 1998)							

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.	
PCT/US03/25372	

I.	. Basis of the report					
-	. With regard to the elements of the international application:*					
	the international application as originally filed.					
	the description:					
	pages 1-14 as originally filed					
	pages NONE , filed with the demand					
	pages NONE , filed with the letter of					
	the claims:					
	pages NONE , as originally filed pages NONE , as amended (together with any statement) and a statement and a s					
	pages NONE, as amended (together with any statement) under Article 19 pages NONE, filed with the demand					
	pages 15-17, filed with the letter of 06 May 2004 (06.05.2004)					
	the drawings:					
	pages 1-2, as originally filed					
	pages NONE filed with the demand					
	pages NONE , filed with the letter of					
	the sequence listing part of the description:					
	pages NONE , as originally filed pages NONE , filed with the demand					
	pages NONE , filed with the letter of					
2.	With regard to the language all the elements more delayers.					
	language in which the international application was filed, unless otherwise indicated under this Authority in the These elements were available or furnished to this Authority in the					
	Authority in the following language which is:					
	the language of a translation furnished for the purposes of international search (under Pule 23, 105)					
	the language of publication of the international application (under Rule 48 3(b))					
	55.2 and/or 55.3).					
3.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:					
	contained in the international application in printed form.					
	filed together with the international application in computer readable form.					
	furnished subsequently to this Authority in written form.					
	furnished subsequently to this Authority in written form.					
	furnished subsequently to this Authority in computer readable form.					
	The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.					
	The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.					
4.	The amendments have resulted in the cancellation of:					
	the description, pages None					
	the claims, Nos. None					
	the drawings, sheets/fig None					
5.	This report has been established as if (some of) the amendments had not be					
* R	* Replacement sheets which have been furnished to the					
this ** A	Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).  Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.					
	PCT/IPEA/409 (Box I) (July 1998)					

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Form PCT/IPEA/409 (Box V) (July 1998)

International application No. PCT/US03/25372

V. Reasoned statement under Rule 66.2(a)( citations and explanations supporting su	(ii) with regar	rd to novelty, inventive	step or industrial applicability;
1. STATEMENT		·	
Novelty (N)	Claims	1-20	YES
		NONE	NO
Inventive Step (IS)	Claims	1-20	VEC
-		NONE	YES NO
Industrial Applicability (IA)	Claims	1-20	VDO
, , ,		NONE	YES
liquefied natural gas which is used for cooling and taken a working fluid as claimed.  Claims 1-20 meet the criteria set out in PCT Article claimed can be made or used in industry.			
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#### PCT/USO3/25372.06US2OO4

#### **CLAIMS**

#### What is claimed is:

- 1. A plant comprising a heat source that is cooled by a refrigeration content of a first portion of a liquefied natural gas and thereby heats the first portion of the liquefied natural gas, and an expander in which the first portion of the heated liquefied natural gas is expanded as a working fluid to produce electric power.
- 2. The plant of claim 1 wherein the heat source comprises a combined cycle power plant.
- 3. The plant of claim 1 wherein at least a portion of the expanded liquefied gas is fed into a demethanizer to produce a lean gas and a demethanized bottom product.
- 4. The plant of claim 3 wherein the lean gas is compressed using at least part of the work provided by the expander.
- 5. The plant of claim 3 wherein the demethanized bottom product is fed to a deethanizer that produces an ethane product and a liquefied petroleum gas product.
- 6. The plant of claim 5 wherein the ethane product is employed as a fuel in the combined cycle power plant or petrochemical plant feedstock.
- 7. The plant of claim 5 wherein reflux condenser duty of the deethanizer is provided by the refrigeration content of the first portion of the liquefied natural gas before the heat source heats the liquefied natural gas.
- 8. The plant of claim 1 wherein a second portion of the liquefied natural gas is separated in a demethanizer into a lean gas and a demethanized bottom product.
- 9. The plant of claim 8 wherein the second portion and the first portion have a ratio of between about 0.4 to 0.7.
- 10. A plant comprising a liquid natural gas feed that is split in a first portion and a second portion, wherein a refrigeration content of the first portion cools a heat source in the plant to generate a heated first portion, wherein the heated first portion is expanded as

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a working fluid to produce electric power before entering a demethanizer, and wherein the second portion is used as reflux for the demethanizer.

- 11. The plant of claim 10 in which the first portion is expanded in an expander to produce work.
- 12. The plant of claim 11 wherein the demethanizer produces a lean gas that is compressed to a pipeline pressure using the work provided by the expander.
- 13. The plant of claim 10 further comprising a deethanizer, and wherein the first portion provides reflux condenser duty for the deethanizer before the first portion is heated and expanded.
- 14. The plant of claim 13 wherein the demethanizer produces a bottom product that is fed to the deethanizer, and wherein the deethanizer produces a liquefied petroleum gas product and an ethane product.
- 15. The plant of claim 14 wherein the ethane product is combusted as a turbine fuel in a combined cycle power plant.
- 16. The plant of claim 10 wherein heating of the first portion is provided by a heat transfer fluid that receives heat from at least one of a gas turbine inlet air stream, a heat recovery unit, and a flue gas stream.
- 17. A plant comprising a regasification unit operationally coupled to a combined cycle power unit, wherein a refrigeration content in liquefied natural gas cools a heat source in the combined cycle power unit to thereby produce a heated liquefied natural gas, wherein a processed liquefied natural gas produced from the heated liquefied natural gas is compressed using power produced by expansion of the heated liquefied natural gas, and wherein the heated liquefied natural gas is expanded as a working fluid to produce electric power.
- 18. The plant of claim 17 wherein the regasification unit provides a combustion fuel to the combined cycle power unit, wherein the combustion fuel is prepared from the liquefied natural gas.

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- 19. The plant of claim 17 wherein a demethanizer produces the processed liquefied natural gas.
- 20. The plant of claim 19 wherein the demethanizer provides a demethanized bottom product to a deethanizer, and wherein the deethanizer provides an ethane product as the combustion fuel.